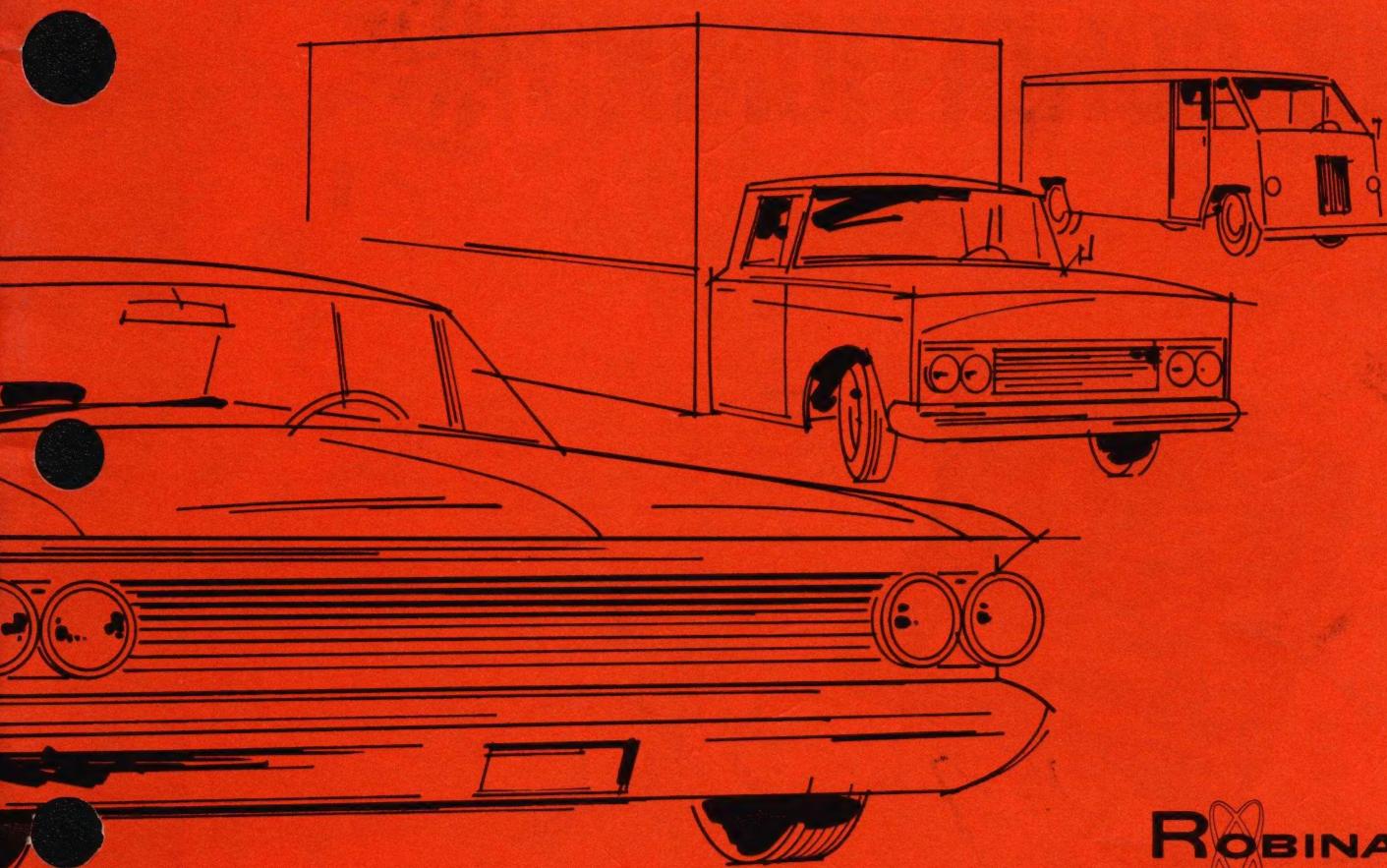


FORM NO. 73-1

January 1973

Supersedes Form No. 72-8

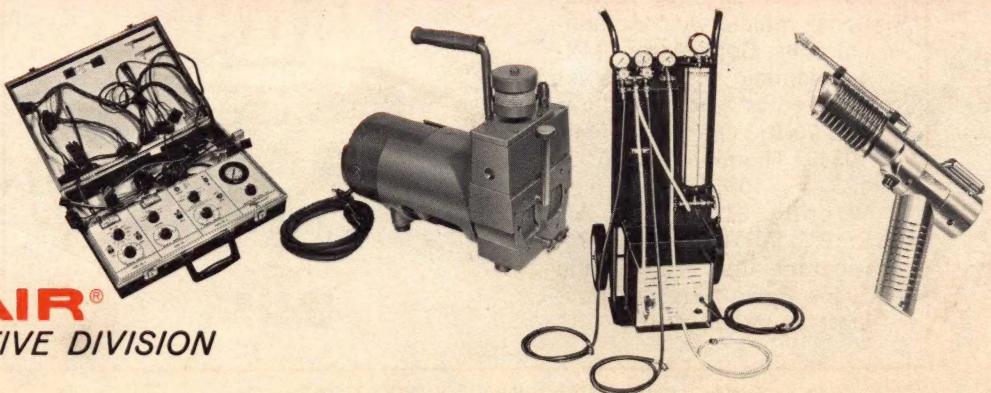


**ROBINAIR®**

**FACTORY APPROVED**  
**SERVICE TOOLS**  
**AND EQUIPMENT**

For Automotive Air Conditioning  
Disc Brake Tools • Tire Tools  
Other Special Service Tools

**ROBINAIR®**  
AUTOMOTIVE DIVISION



# AUTOMOTIVE AIR CONDITIONING

## 10560 Deluxe Auto Air Conditioner Service Tool Set



This set of tools in addition to a vacuum pump (such as the 12467 illustrated on next page) provides the auto service facility with the equipment required to test, evacuate, leak check and recharge automotive air conditioners.

- Manifold with Gauges, Hoses, Hose Holders & Hook (CMN-4-6)
- Propane Leak Detector (10538)
- Serviceman's Goggles (12008)
- Ratchet Wrench (10559)
- Dial Thermometer (25° to 125° F.) (10569)
- Valve Core Removal Kit (V-6301)
- Multi-Can Dispensing Valve (11004)
- Molded Plastic Carrying Case (10544)
- Promotional Materials

## 10565 Basic Auto Air Conditioner Service Tool Set

For automotive or recreational vehicle air conditioning units. Consists of CMN-4-3 Manifold and Gauge set with color coded gauges and 3-ft. charging lines, 10540. Thermometer 25° to 125° F, 10559 Ratchet Wrench 3/16", 1/4", 1/2", 9/16", 11001 Taps-All Refrigerant Can Valve and 10561 Basic Service Training Manual.



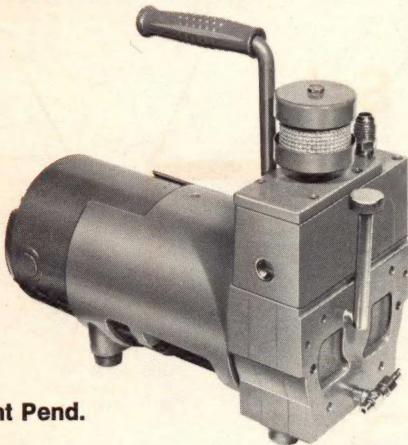
## 10561 Service Manual

This service manual and system diagnosis chart covers Air Conditioning Theory, Introduction to Air Conditioner Service, Testing the System, Diagnosing the System, Servicing System Components, and all Factory Air and Hang-On.

# HIGH VACUUM PUMPS

This line of Robinair vacuum pumps in TWO-STAGE, SINGLE STAGE, DIRECT and BELT DRIVEN versions is designed specifically for the air conditioning and refrigeration field.

## 15000 Single Stage Direct Drive



**Patent Pend.**

Evacuates faster, has free air displacement of 3 CFM, and can create a vacuum of 75 microns under field conditions.  $\frac{1}{3}$  HP, 110V-60 Cycle motor, pump speed 1725 RPM.

FEATURES COMMON TO ALL ROBINAIR HIGH VACUUM PUMPS: vented exhaust, exhaust filter, handle, portability, thermal protected motors. These pumps require Robinair high vacuum oil: No. 13003 quarts, No. 13004 gallons. Oil level is visible through sight glass. Convenient valve simplifies oil changing.

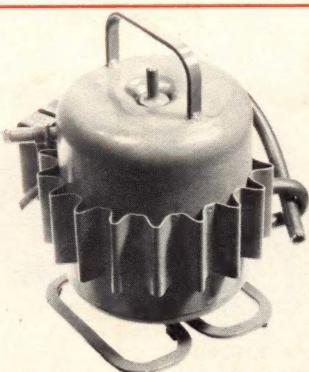
## 12467 Vacuum Pump

Rotary vane compressor is rated the most efficient, low cost pump on the market—capable of reducing pressure to within .3 inches (approx. 7500 microns) of barometric pressure or 29.62 inches of mercury at 29.92 inches barometric pressure. Water or moisture in a refrigerant system is recognized as the major cause of system breakdowns. Excessive moisture will freeze at the expansion valve resulting in system failure. Small amounts of moisture, when combined with refrigerants at high temperatures, form acids which attack the metal parts of the car compressor causing rust and corrosion and eventual failure.

- Hand valve with teflon seat assures positive shut-off.
- Capacity of .8 CFM,  $\frac{1}{4}$  HP-115 volt motor—3 position starting switch and overload relay protector.



## 10567 Vacuum Pump



This rotary vane compressor type vacuum pump provides the same performance as our 12467.

## 12300 Vacuum Pump Oil for 10567 and 12467 pumps

For longer pump life, it is important to change pump oil frequently.



# CHARGING AND TESTING

EXCLUSIVE WITH ROBINAIR

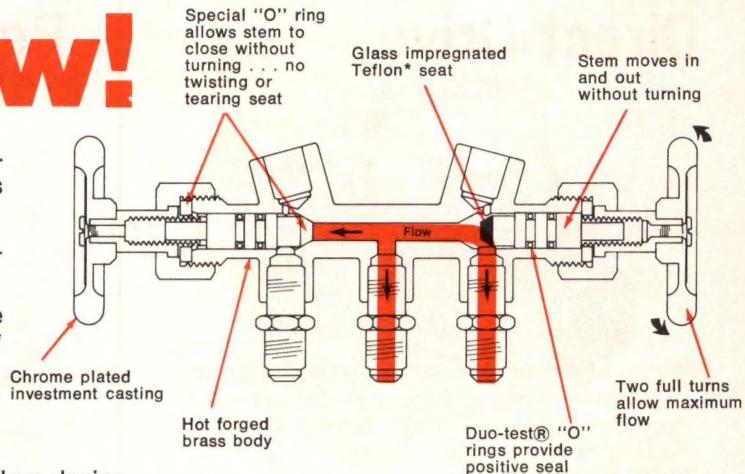
## Fast-flow!

Completely redesigned CMN manifold interiors give FULL flow with only 2 turns of the handwheel.

- Ease of operation . . . minimum fingertip exertion opens and closes.
- Stem remains stationary when handle is turned . . . no friction on Teflon\* seat.

\*DuPont trademark

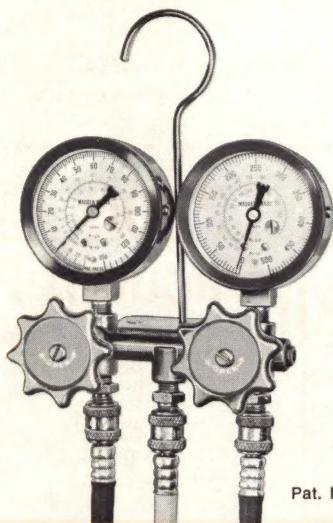
Front wheel manifolds have same Fast-flow design.



### CMN-4F-A-6 Double Port Manifold With Access Valve

With front hand wheels. Equipped with side access valve fitting having a built-in flow check that permits the system to be evacuated and recharged without disconnecting any lines from the manifold, thus avoiding possible atmospheric contamination. Same quality construction features as CMN-4-6. Includes four (4) color coded charging lines (1) 72" yellow for vacuum connection, (1) 72" white for refrigerant, (1) 36" blue for low side (suction), (1) 36" red for high side (discharge).

**CMN-4F-A-3** same as above but with 3 ft. color coded hoses.

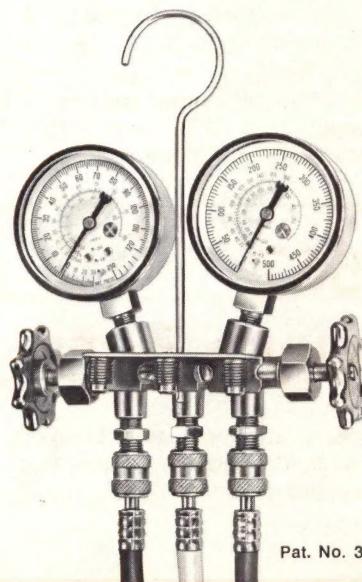


Pat. No. 3,118,463

### CMN-4-6 Standard Manifold With Side Wheels

With side hand wheels, color coded 2½" gauges and three (3) charging lines; (1) 36" blue, (1) 36" red and (1) 72" white. Complete with hose holders and hook.

**CMN-4-3**—Same as above but with 3-ft. color coded hoses.



Pat. No. 3,118,463

## 10413 E.P.R. Valve Test Gauge Kit

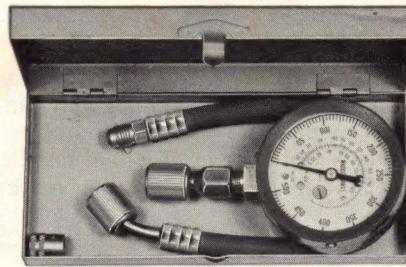
**NEW**



- 36 in. blue line with  $\frac{1}{4}$ " male flare x  $\frac{1}{4}$ " female flare quick coupler with valve depressor provides ample hose length to reduce hazard of moving fan blades.
- 2 $\frac{1}{2}$ " blue compound gauge, 30" vacuum x 120 lbs. (with 250 lb. retard) restrictor screw and recalibrator,  $\frac{1}{8}$ " MPT connection.
- Gauge Coupler— $\frac{1}{8}$ " FPT x  $\frac{1}{4}$ " female flare.
- Metal Box.

**CM-92**—Same as above but with 12" blue line.

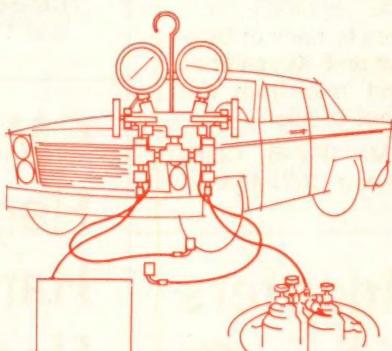
## CM-93 High Side Test Gauge Kit



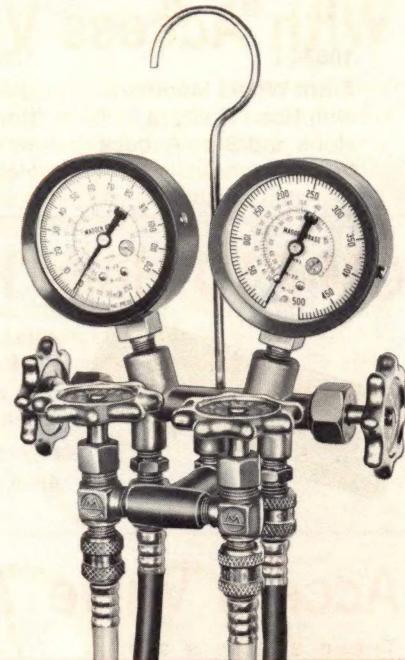
- 12 in. red charging line with  $\frac{1}{4}$ " male flare x  $\frac{1}{4}$ " female flare quick coupler with valve depressor.
- 2 $\frac{1}{2}$ " red pressure gauge, 0 to 500 lbs. with restrictor screw and recalibrator,  $\frac{1}{8}$ " MPT connection.
- Gauge Coupler— $\frac{1}{8}$ " FPT x  $\frac{1}{4}$ " female flare quick coupler unit.
- Metal Box.

## CMN-44-6 Four-Way Testing Unit

Enables serviceman to evacuate, test and recharge car air conditioners without disconnecting either the refrigerant supply line or vacuum line. Simply hook up to the refrigerant supply, the vacuum pump, the high and low sides of the car compressor and proceed with evacuation and recharging operation. Complete with hose holders, color coded 2 $\frac{1}{2}$ " gauges, hook and four (4) color coded charging lines; (1) 36" red, (1) 36" blue, (1) 72" yellow and (1) 72" white.

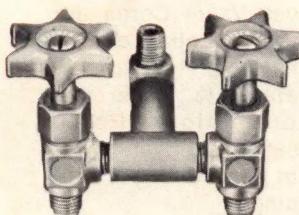


Pat. No. 3,118,463

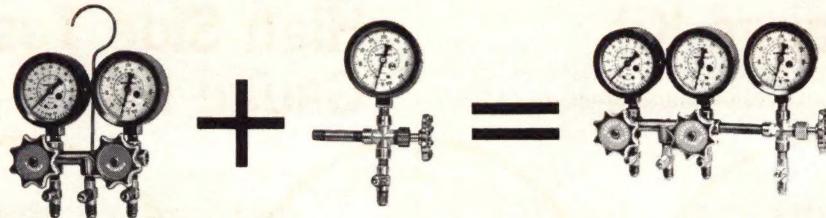


## CM-1K 4-Way Conversion Kit

Converts any Robinair manifold with side wheels into a permanent style 4-way unit. Consists of conversion elbow, two (2) hose holders, quick coupler and two (2) service valves. Valve connection  $\frac{1}{4}$ " S.A.E. male flare.



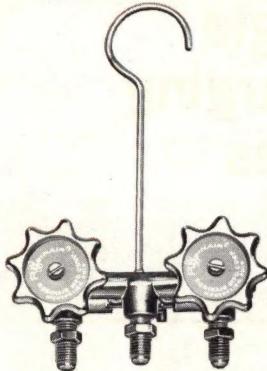
# 10536 3-Way Gauge Conversion Kit



Where three (3) gauge readings are desirable, such as on Chrysler conditioners, you can quickly and easily make up your own outfit by simply connecting a Robinair front wheel manifold unit and the 10536 Single Gauge Unit which includes

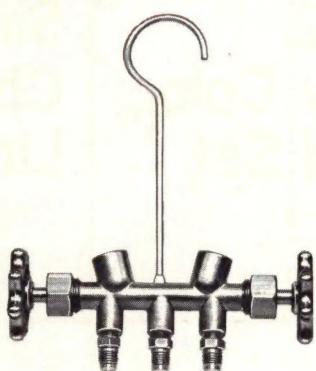
a 2" brass nipple, 2½" blue compound gauge 0 to 30" x 120 P.S.I. with restrictor screw and recalibrator, ¼" male flare connector, hose holder and hand valve.

## Replacement Manifolds



10534-F

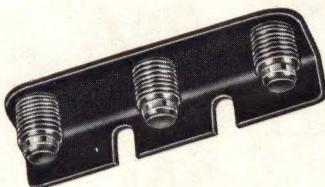
Front Wheel Manifold with Hose Holders, Hook and Side Access Valve.



10574-S

Side Wheel Manifold (for 2½" gauges) with Hose Holders.

## CM-P10 Hose Holder



Attaches to back of Double Port unit. Keeps hose dry and free from dirt when not in use.

For CMN-4F-A-6, CMN-4F-A-3 and CMN-44-6.

## Access Valve Adapters

These adapters are used to depress Access Valve Cores during evacuation and recharging. ¼" female flare x ¼" male flare connections. Rubber seat gasket in swivel nut permits finger tightening.



4615-S4  
90° Elbow Adapter

4610-S4  
Straight Adapter

## Replacement Gauges



11693

2½-inch red pressure



11692

2½-inch blue compound

### Pressure gauges

- Range—0 to 500 lbs. • Temperature scale for R-12 and R-22.

### Vacuum gauges

- Range 0-30" Vacuum x 120 lbs. pressure with 250 lb. retard • Temperature scale for R-12 and R-22.
- All gauges equipped with recalibrator and restrictor screw.

CM-5800—Replacement lens for 11692 and 11693 gauges.

## CM-P12 Handy Hanging Hook



Fits CMN-4F-A-6, CMN-4F-A-3, CMN-4-6, CMN-4-3 and CMN-44-6 Manifolds.

## Service Parts



CH-109-6 Gasket

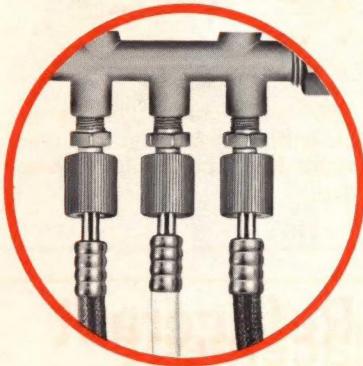


CH-100-6 Valve Depressor  
(6 pieces per package)

## Charging Line Sets

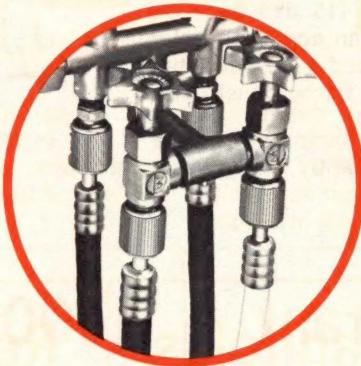
Brass barb, ferrule and quick coupler nut for easy finger tight connections • Hose is capable of withstanding working pressures up to 500 PSI with an average burst pressure of 2000

PSI • Access valve depressor in elbow end included on all lines . . . won't pop out under refrigerant pressure . . . may easily be removed if not required.



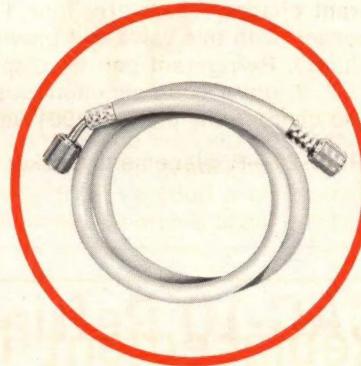
### 10571 3-Way Color Coded Set

Consists of 2—36 in. quality rubber covered lines, (1) blue for low side, (1) red for high side; and (1) 72 in. white line for vacuum or refrigerant.



### 10572 4-Way Color Coded Set

Four color lines especially for use with Robinair's new 4-Way Testing Units. Eliminates line tracing. (1) 72 in. yellow for vacuum, (1) 72 in. white for refrigerant, (1) 36 in. blue for low side and (1) 36 in. red for high side.



### Single Charging Lines

|               |              |               |
|---------------|--------------|---------------|
| CH-36-E1-B    | CH-48-E1-R   | CH-72-E1-W    |
| 36-in. Blue   | 48-in. Red   | 72-in. White  |
| CH-36-E1-R    | CH-48-E1-W   | CH-72-E1-Y    |
| 36-in. Red    | 48-in. White | 72-in. Yellow |
| CH-36-E1-W    | CH-60-E1-W   | CH-96-E1-B    |
| 36-in. White  | 60-in. White | 96-in. Blue   |
| CH-36-E1-Y    | CH-72-E1-B   | CH-96-E1-R    |
| 36-in. Yellow | 72-in. Blue  | 96-in. Red    |
| CH-48-E1-B    | CH-72-E1-R   | CH-96-E1-W    |
| 48-in. Blue   | 72-in. Red   | 96-in. White  |

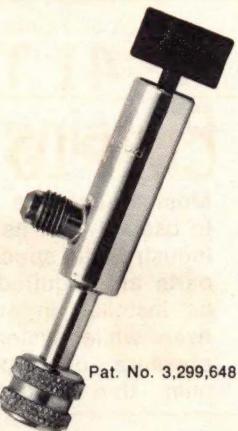
## 10678 Refrigerant Check Valve



Connected between compressor and dispensing valve. Prevents accidental pressure fill of freon container if connected to high side with compressor running.

## 10515 Evacuating And Charging Valve

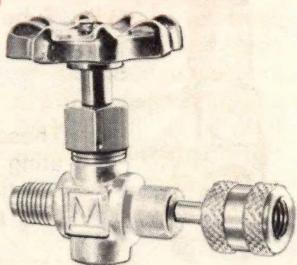
Use of 10515 greatly reduces the time required to evacuate and charge air conditioner systems with Core fittings. Tool is assembled in-line between the Charging line and the Compressor access fittings. It repositions and holds captive the valve core thereby removing it as a restriction to the refrigerant flow. Complete operating instructions are furnished with tool.



Pat. No. 3,299,648

## VQ-4S Quick Coupler Valve With Depressor

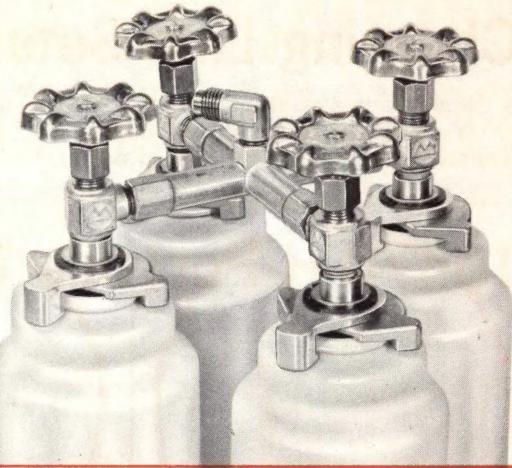
When connected to high side of air conditioning system, it provides positive shut-off before disconnecting charging hose, insuring against personal injury to the serviceman from refrigerant remaining in charging line.



## 11004 Multi-Can Dispensing Valve

A large proportion of cars require 3 lbs. 12 oz. refrigerant charge. Therefore, four 1 lb. (15 oz.) cans dispensed with this valve will provide an accurate system charge. Refrigerant can be dispensed 1 can at a time or 2, 3 and 4 cans simultaneously. Same construction and clamp principle as 11001 valve.

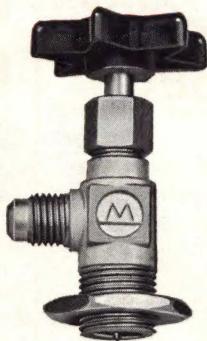
11001-26—Replacement Gasket 12/pkg.



## CAC-10 Refrigerant Can Dispensing Valve

For Spud Screw Top Cans. All brass forged body, sturdy metal hand wheels, hardened tool steel piercing needle plus Zytel seat for positive leak proof shut-off.

11001-26—Replacement gasket.



## 11001 Refrigerant Can "Taps-All" Valve

For Flat Top and Screw Top Cans. Same construction features as CAC-10, except design permits tapping all styles of 1 lb. refrigerant containers now on the market. Holding clamp slips on easily and tightening screw allows for safe, secure dispensing of refrigerant.

11001-26—Replacement gasket 12/pkg.



Pat. No. 3,438,656

## HP-41 Tube Piercing Valve

Most trouble-free and easiest to use valve of its type in the industry. No special tools or parts are required. They can be installed in any position, even while system is under pressure, on copper, aluminum, thin wall brass tube, wherever air, liquid, or gas flow is required. Fits 3/16", 1/4", 5/16" and 3/8" O.D. Tube. 1/4" S.A.E. Conn. Size.



Pat. No. 2,875,777

## QP-14 Tube Piercing Valve



Pat. No. 2,875,777

This valve features a special built-in flow check and has same high quality and features as other models. Fits 3/16", 1/4", 5/16" and 3/8" O.D. Tube. 1/4" S.A.E. Conn. Size.

These tube piercing valves are for evacuating and recharging refrigerators and air conditioners found in recreational vehicles and mobile homes.

## 14381 Dispensing Valve For Disposable Cylinders

Opens Schrader valve core on throw-away refrigerant cylinders. "T" handle facilitates easy carrying. Includes Quick Seal Cap.



# EVACUATING AND RECHARGING EQUIPMENT

## 10570-H Portable Charging Station



This Charging Station utilizes the commercial air conditioning Industry's renowned patented "Dial-A-Charge®" Cylinder in conjunction with controlled electric heat as specified under 12550-H Heated Dial-A-Charge® Cylinder.

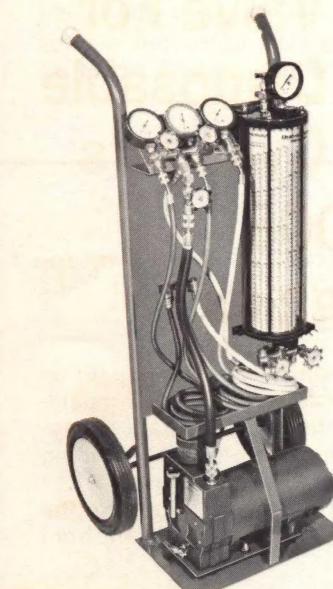
Complete with vacuum pump (12467), manifold, color coded gauges, and 84-inch color coded charging lines, this unit requires only one hook-up to the car for complete diagnosing, evacuating and recharging of the system. The portable feature makes it the most practical piece of equipment for the automotive air conditioning technician.

Construction—1" tubular steel framing, rigid sheet metal support plates, mounted on 1 3/4" x 10" semi-pneumatic tires, ball bearing wheels for easy movement throughout service area—National Blue enamel finish. Web strap and bracket at rear of station provides for mounting of 25 or 50 lb. refrigerant drums.

Includes second compound (low side) gauge for checking evaporator pressure relief valves (EPR). \*See 12467 Vacuum Pump and 12550-H Charging Cylinder for specifications.

Station less vacuum pump, but complete with manifold and gauges, charging lines and heated Dial-A-Charge® cylinder available under Part No. 10570-50H.

**10593**—Air Conditioning Service Station Cover fits 10570-H and 10425 Charging Stations. Prevents accumulation of oil film, dust and grease on equipment. Of nylon reinforced fabric with a double thick top surface of tough vinyl film.



## 10425 High Vacuum Charging Station

Cart is of same construction as 10507-H described above. Model 10425 utilizes high vacuum pump model 15000 with 3 CFM free air capacity, making it ideal for evacuating any mobile air conditioning or refrigeration system.

## 10595 Deluxe Air Conditioner Charging Station (WITH HEAT ELEMENT)

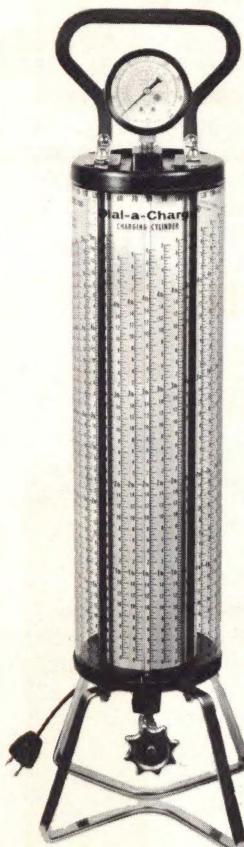
10595 includes a vacuum pump, gauges, manifold, charging lines, bleed down feature, etc. . . . all the necessary equipment for quality auto air conditioner service. And it's all housed in a beautiful cabinet. Unit features a charging method that heats up to 5 lbs. of refrigerant, compensates for expansion at different pressures to assure that complete charge enters the high side of the compressor.

The exclusive charging cylinder on the 10595, using the controlled heat element, eliminates over and under charging while assuring that all the refrigerant is introduced in the high side of the system. No more slugging the compressor . . . No more refrigerant waste . . . No more inaccurate charging . . . No more leakage.



10426—Field Fix Kit 3-wire connector.

## 12550-H Heated Dial-A-Charge® Cylinder



The only portable device available designed to adjust for volume fluctuation in refrigerant caused by temperature changes. Calibrated for refrigerant 12 and 22 for accurate recharging of auto air conditioners and recreational vehicle air conditioners. Available in a heated version model 12550-H. The Dial-A-Charge with heating element provides a consistent positive pressure at the cylinder to overcome pressure equilization between the refrigerant source and the system being charged. This not only permits vapor charging in the low side, but also increases speed of high side liquid charging. Eliminates possible reed valve and piston failure caused by improperly "slugging" the low side.

Shut-Off valve at bottom of cylinder contains a teflon seat which provides finger-tip control while charging systems with the exact factory specified amount of refrigerant. Eliminates wasted refrigerant and permits the service facility to purchase refrigerant in large economical drum containers. In conjunction with any Robinair gauge manifold set and Vacuum Pump, provides the serviceman a complete inexpensive hook-up required to evacuate and recharge an automotive air conditioner in a minimum of time.

14284-2—Replacement Cartridge Heating Element

## 10576 Compressor Oil Injector



Adding oil to air conditioning compressors is at best a slow process without this tool on cars without shut-off valves. The refrigerant charge is wasted and some disassembly required. 10576 is used in conjunction with a gauge manifold assembly. It utilizes the pressure differential from the high to the low side of the system to inject 2 oz. of oil into the unit.

## 12008 Goggles



Essential safety equipment for all mechanics servicing air conditioners. Liquid refrigerant escaping from a loose or broken fitting will freeze any object and can cause permanent injury to the eyes. Built for protection from liquid.

# LEAK DETECTION

## 14470 Transistorized DUO-RANGE Refrigerant Leak Gun

- Cordless
- Audible Signal
- Ruggedized
- Continuous Duty
- Reference Leak
- Light Weight
- Free Carrying Case



Trigger knob duals as an On-Off switch and sensitivity control. Turn trigger knob on and a piercing squeal is heard: continue turning knob in same direction until slow ticking sound is heard. You are now ready to probe for leaks. Built-in reference leak permits actual check. 5-ft. flexible lead. Holster available.

DUO-RANGE: 2-position switch on top of gun . . . SEARCH finds general area of leak and PINPOINT locates exact point of leak.

FLEXIBLE PROBE: can shape to reach areas impossible to get at with straight solid probe.

NEW TIP PROTECTOR: protects against grease and dirt, can be easily cleaned.

SIZE: 6 1/2" high by 7 1/4" long. WEIGHT: 1 lb. 9 oz.

LEAK DETECTION CAPABILITY: 1/2 oz. per year

REFERENCE LEAK RATE: 1/2 oz. per year

VOLTAGE: 1.5 volts DC

POWER SOURCE: 2 standard "D" cell flashlight batteries

SENSOR ELEMENT: will not fatigue or become contaminated if exposed to high concentrations of halogen gases.

GUN HOUSING: High impact resistant molded plastic chrome plated

BATTERY LIFE: approximately 40 hours

SERVICE KIT 14470-5 containing the following items is available.

- 1—14470-1 Sensor Element
- 1—14000-2 Reference Leak
- 1—14470-3 Sensor Tip Guard

Also available—14000-4 Holster

## 10538 Propane Leak Detector

Provides an inexpensive method of locating refrigerant leaks. Utilizes the "flame color" principle by drawing leaking refrigerant through the sniffer tube, thus causing the flame to change color and also increase its intensity. Easy to ignite —no priming necessary.

10538-2 Replacement Head Assembly

10538-3 Replacement Reactor Plate

10538-4 Replacement Valve Assembly



## 12214 Replacement Propane Tank

This fuel cylinder meets I.C.C. specifications, and can be sent through the U.S. mail.



# TEMPERATURE TESTING

## 10540 Pocket Thermometer 25° To 125°F



A standard precision glass pocket thermometer complete with metal carrying case. Five inches long with red spirit on white background. The minimum requirement for every air conditioner serviceman.

## 10569 Bi-Metal Dial Thermometer 25° To 125°F



This handy, accurate dial thermometer with 5" stem is a must for determining discharge duct temperatures during diagnosis and after recharging.

- Accuracy  $\pm \frac{1}{2}$ °F.
- Shock Resistant
- Furnished with shock-resistant carrying tube with convenient pocket clip.

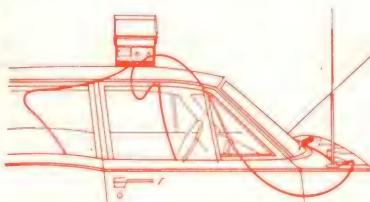
10596 — -40° to +160° F

10597 — 0° to +220° F

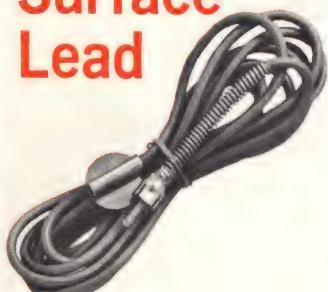
## 12860 3-Lead Thermistor Temp-Tester

### Compares Temperatures at Three Separate Locations.

An ideal service aid to prove to customers the effect of the auto air conditioner on the temperature inside the car versus the outside ambient temperature. Utilizing the three 15-ft. thermistor leads, the discharge air ducts may be checked and properly balanced merely by a turn of the switch. • Easy to read, large 3 1/2" meter. • Dual range of -50° to +50° F. and +50° to +150° F. • Housed in a rugged Texon carrying case with snap-up lid as pictured. Instrument includes 3 general purpose leads 12860-1, 15 ft.



## 12860-2 Surface Lead



## 12860-3 Free Air Lead



## 10406 Control Knob Adjuster



Adjusts "Comfortron" temperature control setting. Applicable to all GM Comfortron units.

# HAND TOOLS

## 14226 Wire Cutter And Crimping Tool



This tool will crimp insulated and non-insulated terminals utilized in electrical circuits of air conditioner controls. Also cuts and strips wire sizes 10 and 18 through 20.

## 14145 Illuminated Inspection Mirror



Powered by standard "pen-lite" batteries this inspection mirror is intended primarily to inspect installation of the "O" ring seal in the shaft housing while compressor is still mounted on the car.

## 14160 Hose Clamp Pliers



In many instances, it is necessary to remove the car radiator prior to servicing and leak-checking the condenser. The 14160 with exclusive ratchet design turns a difficult job into a simple task when removing Corbin hose clamps.

## 14282 "Uni-Flute" Drill ( $\frac{3}{4}$ " diameter x $\frac{1}{4}$ " diameter shank)

This drill is especially recommended for drilling evaporator drain hose openings through floor boards. Tool design permits drilling through floor mats and carpeting cleanly and efficiently without unraveling carpeting pile.



## 14270 Copper Tube Cutter



Midget Tube Cutter  $\frac{1}{8}$ " through  $\frac{1}{2}$ ". Compact and easy to use. Accurately cuts hard and soft tubing  $\frac{1}{8}$ " through  $\frac{1}{2}$ " O.D. Ideal for close quarters, requires only  $1\frac{1}{4}$ " clearance. Particularly suited for copper tubing as found in recreational vehicles and mobile homes.

## 14234 Hole Saw and Arbor Set



Kit contains

|  |                           |
|--|---------------------------|
| 1 — 14234-1 hole saw arbor                           | 1 — 14234-3               |
| ( $\frac{3}{8}$ " dia. x $\frac{1}{4}$ " hex shank.) | $1\frac{1}{4}$ " dia. saw |
| 1 — 14234-4  | $1\frac{1}{2}$ " dia. saw |
| 1 — 14234-2  | 1 — 14234-5               |
| $\frac{7}{8}$ " dia. saw                             | $1\frac{3}{8}$ " dia. saw |

High speed steel hole saws for cutting refrigerant line openings in fire walls. Saws made with a wear-resistant fast cutting high speed tool steel edge, permanently electric welded to a mild steel back. This construction provides maximum strength with no chance of edge stripping or shattering. Kit packed in molded plastic storage case.

Details may be ordered individually.

## 10559 Air Conditioner Ratchet Wrench

( $\frac{1}{2}$ " and  $\frac{9}{16}$ " hex and  $\frac{3}{16}$ " and  $\frac{1}{4}$ " square).



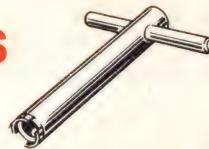
## 12396 Positive Pinch-off On Tubing Through $\frac{3}{8}$ " O.D.

Patent No. 3,078,904



The only Pinch-Off Tool available to provide the field serviceman with a seal that duplicates the factory seal. The tool's unique design employs screw-type action, with ball bearings accepting the thrust for thread safety and ease of operation. Turn the screw with the handle provided or with a ratchet wrench and the tube is easily depressed to a positive pinch-off without being weakened, cut or perforated. It is ideal for closing off compressor process tubes and is a companion to the No. 12458 Process Tube Kit.

## 10407 By-Pass Valve Adjuster



## 10408 Suction Throttling Valve Adjuster



10407 is designed to enter the recess in the G.M. bypass valve for quick, easy adjustments. 10408 is a spanner type wrench with two pins that engage the holes in adjusting nut. By turning tool body, adjustment is made.

## 14313 Standard Style Swaging Tool



This tool simplifies enlarging one end of tube so that two pieces of the same size tube can be soldered together. Sizes plainly marked on each tool for identification. Gauge lines insure uniform, accurate work.

14313—Contains one each  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ", and  $\frac{5}{8}$ ".

## 14320 Tube Benders Outside Spring Type



Made of Special coil spring wire. Slips over outside of tubing making it easy to bend by hand without collapsing the tube. Flared end assures easy removal after tube has been bent.

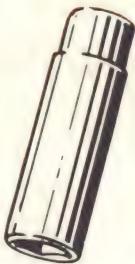
14320—Contains one each  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ " and  $\frac{5}{8}$ " tube bending springs.

# COMPRESSOR SERVICE TOOLS

## 10416 9/16" Thin Wall Hex Socket

(G.M. Compressor)

This socket is used to remove and tighten compressor shaft nut. Outside diameter of socket is ground to a special size to assure getting on the nut without interference with other parts.



## Replacement Fittings



### Threaded type access fittings

May be replaced in the compressor, suction throttling valves, etc. where normally installed. Flow check valve cores in these large hex dry seal pipe thread fittings are securely installed at the factory, and all fittings are furnished with quick seal caps.



### VUI-4A

1/4" male flare x 1/8" MPT Access Half Union



### VUI-4B

1/4" male flare x 1/4" MPT Access Half Union

### V-6301

#### Valve core removal kit

Designed to quickly remove and replace all access fitting valve cores. Has removable threaded cap for storage of six (6) extra valve cores included with tool.



### 4620-4

#### Quick Seal caps

Designed for quick, sure finger tight sealing of 1/4" male flare connections. Keeps fittings dry and free from dirt and other foreign material. 1/4" S.A.E. flare Quick Seal Cap.

### VC-5344

#### Replacement valve core

Fits all access type fittings.

## 10418 Clutch Hub Holding Tool

(G.M. Compressor)

When compressor has failed electrically and clutch cannot be energized or when servicing on a work bench, compressor shaft nut cannot be loosened unless clutch hub is held, 10418 does the job.



## Snap Ring Pliers



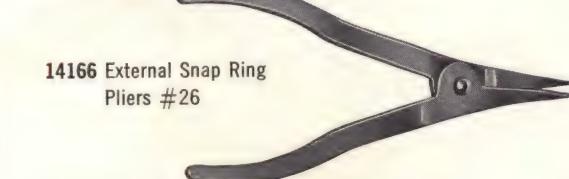
14161 Internal Snap Ring  
Pliers #21



14162 External Snap Ring  
Pliers #22



14163 Internal Snap Ring  
Pliers #23



14166 External Snap Ring  
Pliers #26

In order to service the compressor shaft bearings and seals on the 5 and 6 cylinder G.M. compressors, the above snap ring pliers are being made available to efficiently remove and replace the respective retaining rings in the clutch hub and drive plate assemblies and seal seat retaining rings.

## 10683 Internal Snap Ring Pliers



For quick and easy removal of internal snap ring to service shaft seal on GM compressor.

# 10522 Universal Compressor Tool Kit

FOR "ON-THE-CAR" FIELD SERVICING OF ALL MODELS OF G. M., FORD, CHRYSLER, AMC AND ALL AFTER-MARKET AUTO AIR CONDITIONER COMPRESSORS.



This kit is comprised of Robinair's two popular Compressor Tool Kits, 10500 & 10550, plus G. M. 5 Cylinder Compressor Tools, Chrysler, "EPR" Tool and Snap Ring Pliers.

#### Services:

Shaft Seals  
Bearings  
Clutches  
"O" Rings  
Retainer Rings  
Pulleys  
"EPR" Valves  
Checks Oil Level

#### Applicable to:

**—COMPRESSORS**  
G.M.—Frigidaire  
York Models A-206, 209  
& 210  
Tecumseh Models HG  
850 & HG 1000  
Chrysler Air Temp  
**—CLUTCHES**  
G.M.  
Warner  
Pitts  
Eaton

Kit consists of 10520 TOOL BOARD with special hooks for mounting each tool and complete instructions for the use of the following tools in the kit.

1. 10501 Pulley Puller Set
2. 10502 Pulley Installer/Bearing Remover & Installer
3. 10503 Seal Assembly & Installer
4. 10504 Hub Drive Plate Remover (G.M. 6 cyl.)
5. 10504-3 Hub Drive Plate Remover (G.M. 5 cyl.)
6. 10514 Shaft Seal Protector
7. 10507 Seal Seat Remover & Installer
8. 10508 "O" Ring Remover
9. 10509 "O" Ring Installer
10. 10505 Hub Driver Plate Installer (G.M. 6 cyl.)
11. 10505-1 Hub Driver Plate Installer (G.M. 5 cyl.)
12. 10510 Snap Ring Installer
13. 10545 Oil Dip Stick
14. 10546 Clutch Spanner Wrench
15. 10547 Seal Installer & Seal Plate Aligner
16. 10548 Clutch Removing Bolts
17. 10549 Shaft Seal Puller
18. 10551 "EPR" Valve Remover & Installer
19. 14161 Internal Snap Ring Pliers #21
20. 14162 External Snap Ring Pliers #22
21. 14163 Internal Snap Ring Pliers #23
22. 14166 External Snap Ring Pliers #26
23. 10513 Ceramic Seal Seat Remov. and Inst.

## 10551 Chrysler "EPR" Valve Remover And Installer



Designed to grip the Evaporator Pressure Regulator Valve for easy removal and installation without damaging adjacent parts.

## 10517 GM Compressor Test Plate



Attaches to rear head of compressor over high and low pressure ports to allow checking of high and low side pressures.

# 10500 GM-6 Cylinder Compressor Tool Kit



The compressor is the driving force of the automobile air conditioning system. Since it, in turn, is driven by the engine crankshaft by means of a drive pulley, belt and electric clutch, the major causes of inoperative compressors are worn bearings and defective shaft seals. Field service of the compressor is thus usually confined to replacement of these parts.

However, failure to use the correct tools during seal replacement can cause compressor damage and replacement seal failure.

The three popular types of compressors currently used on U.S. Auto air conditioning systems are:

1. G.M. Frigidaire
2. York Models A-206, 209 and 210
3. Tecumseh Models HG850 & HG1000

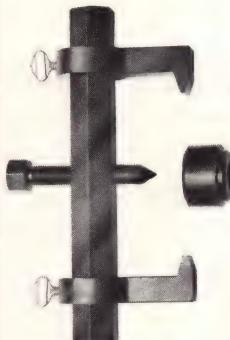
Two economical tool sets have been developed for field servicing of shaft bearings and seals for the above models.

Each tool is a necessity and a definite time saver.

Packed in molded plastic storage case.

## 10501

Pulley  
puller kit



## 10502

Pulley installer —  
bearing remover  
and installer kit



## 10503

Seal assembly  
remover &  
installer



## 10504

Hub Drive Plate  
Remover Kit



## 10505

Hub and drive  
plate assembly  
installer



**10507**Seal seat remover  
and installer**10508**

"O" Ring remover

**10509**

"O" Ring installer

**10510**

Snap ring installer

**10513**Ceramic seal  
remover and  
installer**10514**Shaft seal  
protector

## Compressor Overhaul Tools



**10429** Parts Holding Tray holds internal parts of compressor for easy accessibility, keeps them free from dirt and foreign matter.



**10431** Holds GM compressor for servicing of internal parts.

**NEW**

**10432** Compressing Fixture facilitates disassembly, repair and reassembly of compressor cylinder assembly.

## Optional Tools For The 5 Cylinder GM Compressor

Although the 5 cylinder compressor was discontinued in 1961, there are still many cars on the road today equipped with these compressors which undoubtedly are in need of service. Because of this, Robinair is continuing to make these optional tools available.

The 10501 Pulley Puller Kit also has application on the 5 cylinder compressor.



**10504-3**  
Adapter

Used with 10504 from 6 cylinder kit for compressor clutch assembly removal.



**10505-1**  
Screw

Used with 10505 from 6 cylinder kit for clutch plate and pulley installation.

# 10550 York And Tecumseh Compressor Tool Kit

(in molded plastic storage case).



**10545**

Oil dip stick



**10546**

Clutch spanner  
wrench



**10547**

Seal installer and  
Seal plate aligner



**10548**

Clutch removing  
bolts

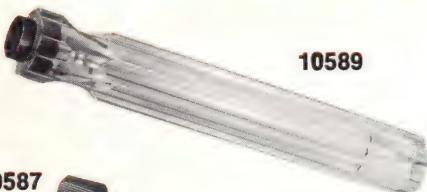


**10549**

Compressor seal  
puller



## 10598 V.I.R. Service Tool Set



**10589**



**10587**



**10581**

**NEW**

1973 GM cars are equipped with a new receiver dryer which contains TX and POA valves. Three tools are required to service these valves, Schrader core, and to reinstall the pick-up tube retainer ring.

**10589**—Specially designed for easy installation of liquid pick-up tube retaining ring.

**10587**—Designed to pick up stem of Schrader core for removal or installation.

**10581**—This is a combination tool for removal of TX and POA valves. Swivel end is used for removal of TX valve and tapered end for removal of POA valve. Removing these valves by any other means will damage them.

## 10519 Steering Column Analyzer



Helps technician analyze steering column wiring harness for electrical problems. Actually eliminates steering column and related wiring and components and replaces them in the system. Thus, the column is not disassembled until problem has been determined to be *in* the column. To use this tool, simply unfasten the connector from the column to the chassis and plug harness from 10519 into car forward harness. Services all domestic GM passenger vehicles 1969 through 1973, American Motors and Chrysler products 1971 through 1973.

## 10433 Automatic Temperature Control Tester



Designed to check temperature sensing element, vacuum and electrical components of 1965 through 1973 GM cars with Automatic Temperature Control, except 1964 through 1970 Buicks with ATC, and 1969-70 Cadillacs with ATC.

This instrument permits complete over-ride of the automatic programmer without removing it from the vehicle to determine whether air conditioning or heating malfunction is in the programmer or elsewhere in the air conditioning system.

Instrument is contained in molded plastic carrying case.

Package consists of molded rubber dummy vacuum plug, 2 molded plastic "T"s for vacuum test, 12 molded plastic unions, necessary adapters for all G.M. Models and complete test instructions and vacuum adapter assembly.

## 10422 And 10588

### 10422

Similar to 10433 except used on GM Automotive Air Conditioning systems 1971 through 1973.



### 10588

Adapts either the 10433 or 10422 to work on Chrysler 71 through 73 Auto Temp II.



# SPECIAL SERVICE TOOLS

## 12852 Weatherstrip Installer



After windshield glass and its weatherstripping are installed in the windshield opening, start at the lower corner of the windshield and insert the rubber weatherstrip insert through the eye of 12852. Then insert spreader end in the weatherstrip groove and push along. One easy operation and the rubber insert is in place.

## 10705 Mechanical Weatherstrip Installer



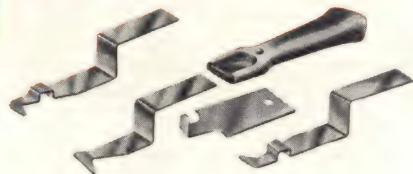
This is the only tool available to install mechanical type weatherstrip attaching clips. 10705 assures no distortion of clips thus eliminating unsatisfactory weatherstrip retention.

## 10704 Door And Window Regulator Clip Remover

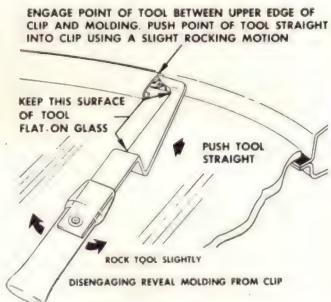


Used for removing the hard to reach retaining clip in the door and window regulators. Applies to GM, Ford and Rambler cars. Tool is also used as a trim pad depressor.

## 10700 Reveal Molding And Windshield Adhesive Removing Tool



This amazing 4-in-1 tool will save you much time and money. By simply loosening one set screw and inserting the proper blade in the universal handle, all window glass operations can be performed.



## Door Hinge Wrenches

**10701** Door Hinge wrench— $1\frac{1}{2}$ ". 1964-68 GM A and X Bodies.



**10702** Front door hinge wrench— $9/16$ ". 1967-68 GM B and C Bodies.



**10435** Door Hinge wrench (supersedes 10703) has additional applications of all GM body styles A&G 1968 through 1973 and all B, L, E & F styles 1971 through 1973.



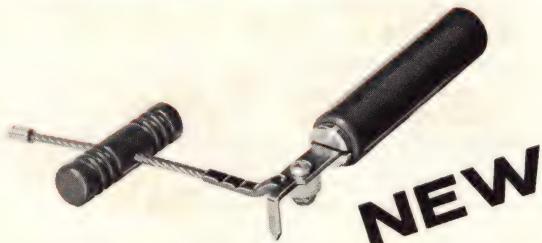
Inaccessible door hinges on late model GM cars make these wrenches a real necessity. Tools are specially contoured so that the doors may be removed and installed easily.

## 14401 Multi-Head Fin Straightener



Six fin straighteners in one—6 in 1—will clean and straighten condenser and evaporator coil fins having spacings of 8, 9, 10, 12, 14, 15 fins per inch. Small, compact, easy to use in confined spaces. The need to keep condenser and evaporator fins free of debris makes this tool a must for auto air conditioning servicemen.

## 10436 Butyl Adhesive Knife



Some cars have windows installed with Butyl adhesive which tends to mend itself when being cut. Model 10436 has an especially designed blade to prevent this. Unit is equipped with pull handle for easy operation.

10436-1—Replacement Blades, pkg. of 6.

## 10437 Headliner Garnish Molding Remover

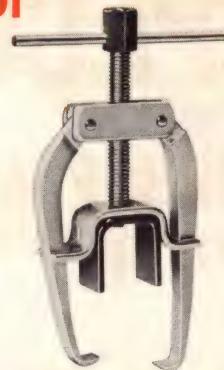


For use in removing plastic retainers from headliner molding on 1973 GM cars.

## 10445 Valve Spring Compressor

**NEW**

Designed for removing overhead valve springs without additional time being required to remove cylinder heads. Hex head on center screw permits use with socket and ratchet wrench, or sliding T-handle simplifies use in close quarters. Jaws are offset to grip valve springs in parallel compression position. Used on GM, Ford, Chrysler and American Motors passenger cars and light truck engines.



## 10584 And 10585 Valve Tools

Now you can save 80% of your time in removing and replacing engine valve seats and keepers without removing engine head. Can also be used on disassembled engine heads.



**10584**—For use on engines with valve stems up to  $\frac{3}{8}$ " dia. (passenger cars and light trucks.)



**10585**—For use on engines with valve stems for  $\frac{3}{8}$ " to  $\frac{1}{2}$ " dia. (trucks, buses and marine.)



**10586 Valve-Air Holder Kit**  
Set of adapters for 14mm and 18mm spark plug holes. Threaded to accommodate standard air hose coupling. Used to apply air pressure to valves to keep them closed for servicing.

## 10449 Valve Lifter Adjuster Tool

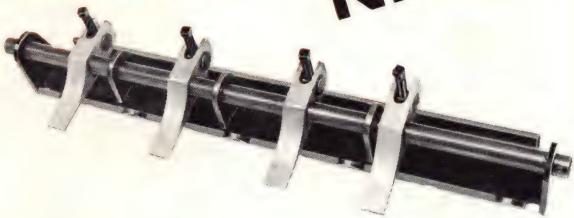


Used in adjusting valve lifters on 1972 and 1973 Vegas.

**NEW**

## 10450 Cam Shaft Remover and Installer

**NEW**



For removing and installing cam shaft on 1971-73 Vegas for grinding valves.

## 10451 Valve Spring Compressor

**NEW**



Used with 10450 cam shaft remover and installer during valve grinding operation on 1971-73 Vegas.

## 10452 Timing Belt Tension Adapter

**NEW**



For use in obtaining proper tension of timing belt in 1971-73 Vegas after grinding valves.

## 10446, 10447 Oil Filter Remover



## 10640 Belt Tension Gauge



For checking strand tension of belts to air conditioning compressors, power steering, fans and generators. Faster . . . easier . . . more accurate because of many new features. Positive stop insures accurate readings and repeatability. Use of reset button and lazy hand pointer enables the technician to reach awkward locations, make a check and remove the gauge to take his reading. All steel constructed case makes gauge rugged and durable, able to withstand real punishment in your service area. Packaged complete with belt strand tension specifications.

## 10440 Harmonic Balancer Puller

**NEW**



Designed to pull balancers, vibration dampeners, pulleys or any gears with tapped holes. Included are 3 side screws  $\frac{3}{8}$ " — 24x2" long,  $(3\frac{5}{16})$  — 18x2" long, (2) $\frac{3}{8}$ " — 16x4" long.

**10446** — Design is unique, to enable mechanic to remove oil filter regardless of obstructions above, below, behind or in front of filter. Can be used with any  $\frac{3}{8}$ " sq. drive ratchet hinge handle or  $\frac{3}{8}$ " T-handle 10448. Order T-handle separately.

**10447** — Same as 10446 except for use on sub-compact cars having filters of  $2\frac{7}{8}$ " dia. (73 mm) to  $3\frac{3}{8}$ " dia. (85.73 mm).

**NEW**

## 10448 3/8" Square Handle

**NEW**



3/8" square handle for use with 10446 and 10447 filter removers.

## 10658 Battery Lifter And Carrier



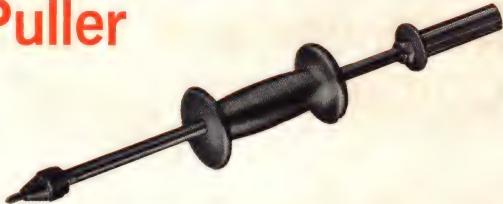
Designed for use in removing and installing batteries having side terminals. Can also be used with batteries having conventional post terminals.

## 10665 Battery Terminal Puller And Generator Bearing Puller



Sharp jaws engage either below or on the sides of cable terminal. A few turns of the forcing screw will lift the tightest terminals without damage to battery case or posts. For even greater versatility swivel is designed so that it also can be used as a Generator Bearing Puller and Magneto Gear Puller—range 5/8" to 3/8".

## 10666 Body Dent Puller



For dent removal in either door or fender . . . punch or drill a hole in deepest part of the dent and insert the self threading screw or hook. A few light taps with sliding hammer and metal is returned to its original position. Shaft is 1/2" x 15 9/16" long—with locking device to keep screw from turning.

## 10661 Battery Terminal Adapter

Designed for use with side terminal batteries as an access for testing and charging. Kit consists of 2 terminal adapters, which are threaded both ends for use with all side terminal batteries having different or same size threads on positive and negative terminals.



## 10427 Double Flare Tool Kit

**NEW**



This flaring tool is designed and built to withstand pressure necessary to double flare soft steel tubing such as is used in replacement of hydraulic brake lines. Hardened bar assembly has 5 threaded dies for tubing sizes 3/16, 1/4, 5/16, 3/8 and 1/2". Bar can also be used to single flare soft copper, aluminum or brass. Flaring bar with adapters is packed in molded plastic container.

## 10453 Steering Column Lock Plate Compressor **NEW**

Permits easy removal of steering column lock plate and installation of new snap ring during reassembly. Provides access to steering column for servicing turn signal, hazard warning switch, lock cylinder, etc. For use on all GM, Chrysler and AMC 1970 through 1973 standard or tilt telescoping column.



## 14450 Heat Gun

500° to 750° F, 115V, 14 Amp.

For safe, instant, electric heat . . .

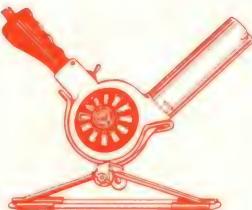


Lightweight, just 2 1/2 lbs; variable heat, cool running, built-in circuit breaker; shock proof; tough GE Lexan housing.

### TYPICAL USES:

- Hot patch tops, seats, upholstery, invisibly
- Installing seat covers
- Loosen rusted fittings
- Reflow acrylic lacquer
- Reflow paint on spot defects
- Shrink seat covers for perfect fit
- Soften, form, mold and weld plastic and apply shrink tubing
- Soften windshield seal for removal and replacement
- Speed drying of touch-ups, eliminate "haze"
- Thaw frozen radiators, gas lines, door locks
- Dry condensation—spark plugs, distributor caps.

Safe, reliable stand (optional) allows gun to be propped at any angle, from horizontal to vertical. Made of heavy gauge zinc-plated wire.



## 14430 Tube Bender

- COMPACT
- RUGGED
- ONE HAND OPERATION



Pat. U.S.A.

Handles 4 tube sizes . . . ideal for bending copper or steel tube in O.D.s of 3/16", 1/4", 5/16" and 3/8". Can bend tube for hydraulic lines and fuel lines, as well as copper tube for air conditioning systems on recreational vehicles.

Bends can be made easily, with no distortion, with simple one hand operation. No need for handle extensions. (For right hand or left hand use. Simply put yoke on the other side of hand tool.)

### 14430

complete set for 3/16" and 1/4" tube

### 14435

complete kit consisting of 14430 and 5/16" former and backplate and 3/8" former and backplate in a molded plastic carrying case.

### 14430-9

5/16" replacement backplate and former

### 14430-10

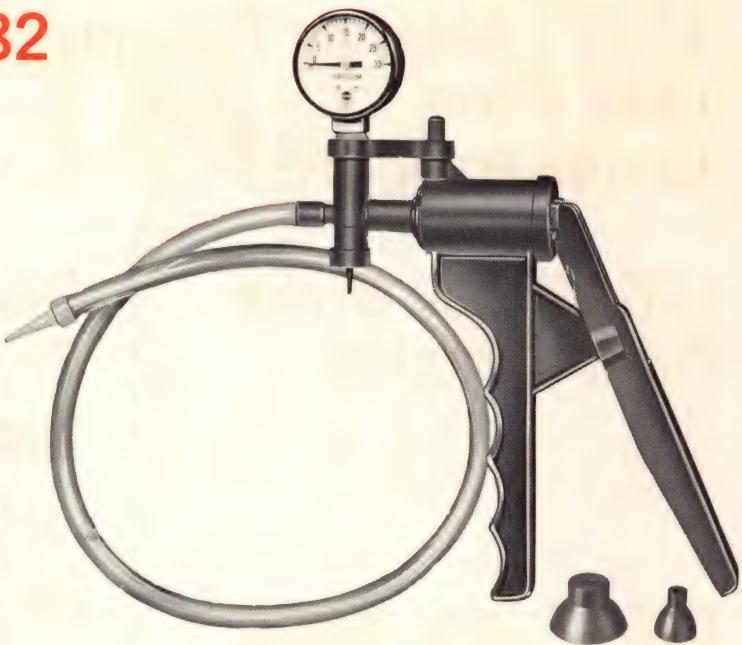
3/8" replacement backplate and former

# 10662 And 10682 Mityvac

## SOME AUTOMOTIVE APPLICATIONS OF THE MITYVAC

**10662**—\*Check distributor vacuum advance relative to specifications on a component. • Checking carburetor vacuum break units for choke and throttle control. • \*Checking vacuum modulator on transmission; checking for oil leaks and modulation. • Check operation of C.C.S. units in air cleaner. • \*Check out operation of air conditioning vacuum hoses and vent doors. • Check vacuum door and trunk locks. • Checking headlamp vacuum door and hoses. • \*Checking headlamp switches for vacuum leak. • Check leak at vacuum reservoirs. • \*Check cruise control switches and transducer operation. • \*Check thermo vacuum switches. • \*Check water temperature valves. • Can also be used to transfer other than volatile liquids.

\*Asterisk indicates those parts that can be checked at the bench, thereby eliminating needless replacement of good parts.



**10682**—Performs same function as 10662 plus checking for valve seal leaks on passenger cars and trucks. Furnished with rubber adapters as shown above.

**10681**—Kit consists of 2 rubber molded adapters used in testing for valve seal leaks on passenger cars and trucks.

## Serrated Ratchet Heads

**10706**



12 pt. 1/2" drive serrated bit for use on head bolts on Buick Opels.

**10707**



12 pt. serrated bit with 3/8" drive and is used on all Buick Opel serrated fasteners except head bolts on all engines. Also for 1971-73 Pinto.

**10708**



12 pt. 1/2" drive, 1.1 litre engine head bolts — Buick Opel.

**10709**



12 pt. 3/8" drive for oil pump return line retaining bolts Opel and some Volkswagen fasteners.

**10710**



For door striker plates on all GM 1968 through 1973.

**10711**



6 point serrated bit used for door striker plates and seat belt fasteners for 1971 Ford and Chrysler.

# DISC BRAKE TOOLS

## 10646 Disc Brake Piston Retainer

2 1/16" diameter,  
application  
Delco Moraine  
1967-1968.



## 10647 Disc Brake Metering Valve Retainer

Application Kelsey-  
Hayes metering valve.



## 10648 Disc Brake Metering Valve Actuator

Application Pontiac  
and Buick, Bendix  
and Delco 1967-1970.



## 10677 Metering Valve Activator

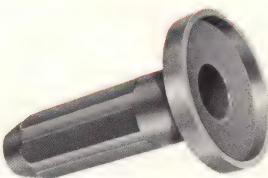
To actuate metering valve  
during one man brake  
bleeding operation. For all  
cars except those using  
Kelsey-Hayes metering  
valve.



**NEW**

## 10653 Disc Brake Dust Boot Installer

Application Chevrolet  
1968 through 1973,  
single piston disc brake,  
Pontiac 1968 through  
1973, Cadillac 1969  
through 1973.



## Disc Brake Piston Ring Installers



10649 1 3/8" diameter, application Delco Moraine, Corvette 1967-1973

10650 1 1/8" diameter, application Delco Moraine 1967-1973.

10651 2 1/16" diameter, application Delco Moraine 1967-1969.

10652 2 1/8" diameter, application Bendix 1967-1969.

10672 2 13/16" diameter, application Ford and Chrysler.

10673 2 3/8" diameter, application Ford.

10684 3.10" diameter, application Ford 1972-73, Chrysler 1973.

## 10680 Disc Brake Service Tool Kit

Kit is designed  
for use on all  
domestic disc  
brake assem-  
blies. Application  
chart is in-  
cluded with kit.  
Molded plastic  
carrying and  
storage case  
furnished free.



## 10654 Disc Brake Piston Dust Seal Installer

2 1/8" diameter,  
application Bendix  
1967-1969.



## 10655 Disc Brake Seal Installer

2 1/16" diameter,  
application  
Delco Moraine  
1967-1973.



## 10656 Disc Brake Boot Seal Installer

1 7/8" diameter,  
application  
Delco Moraine  
1967-1973.



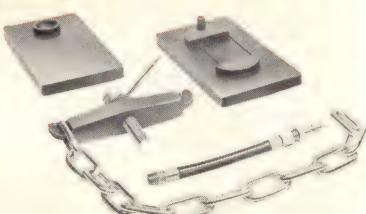
## 10657 Disc Brake Boot Seal Installer

1 3/8" diameter,  
application  
Delco Moraine,  
Corvette  
1967-1973.



## 10659 Universal Master Dual Cylinder Adapter

Adapts to all  
dual master  
cylinders.

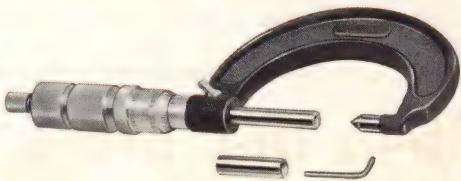


## 10660 Diaphragm Type Brake Bleeder



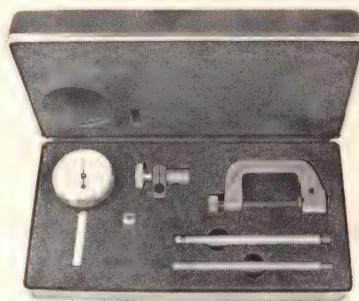
Complete with bleeder hose assembly, male quick coupler connectors and adapters. When used with 10659 dual master cylinder adapter gives application to all U.S. made cars.

## 10642 Disc Brake Micrometer



With pointed anvil for checking disc brake flat surface rotor wear as well as to measure score depths. Deep throat permits measurements well in from rotor edge. Range .300 to 1.300 covers all domestic and imported disc brakes.

## 10643 Dial Indicator Set



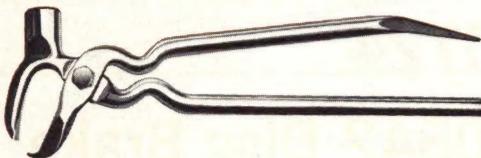
Necessary for checking total indicated run out of disc rotor. Dial indicator shows runout from 0 to .50 inches. Kit is complete with precision dial indicator, extension arms, universal swivel and "C" clamp for quick and easy setup.

## 10644 Torque Wrench



0 to 150 ft./lbs. with swivel 1/2" drive for torquing bolts to manufacturers specifications in servicing disc brake assemblies.

## 10663 Wheel Weight Pliers



Designed to grip wheel weights firmly (weights with or without hole in clip) to remove quickly and easily. Well balanced hammer head drives clips into place. End of handle is offset and flattened to snap off wheel covers.

## 10664 Wheel Cover Tool



Two tools in one for quick, easy removal and replacement of hubcaps. Tip is designed to get behind the edge of the wheel cover without deforming or denting. Rubber head of correct cut is mounted on opposite side for replacing wheel covers.

## 10645 Disc Brake Cylinder Hone

Range 1 1/2" to 3 1/2". Cleans and polishes piston cylinders of all diameters and foreign car disc brake calipers. Can be powered with electric drill with 3/8" or 1/4" chuck. Hone pressure is adjustable. No. 10645-1 for replacement hones in sets of 3 stones, fine grit.



## 10667 Brake Adjusting Tool



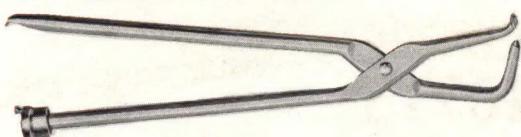
Short length for convenient use on many models requiring it. Bright lustre plate.

## 10668 Brake Adjusting Tool



Has widest use. Forged at proper angle with one end ground tapered for easy access. Bright lustre plate.

## 10669 Brake Spring Pliers



Universal type, with special socket for Bendix brakes. 12" long. Bright lustre plate.

## 10670 Brake Shoe Retaining Spring Tool



To remove and replace disc type washer of washer and spring assembly. Has knurled cap to securely grip washer (notched for washer with ears). Plastic handle, bright lustre plate.

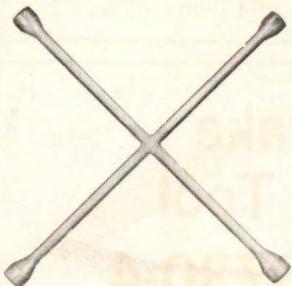
## 10671 Brake Spring Tool



Special socket is used for removing return spring and newly designed end for replacing spring. Bright lustre plate.

# TIRE TOOLS

## LUG WRENCHES

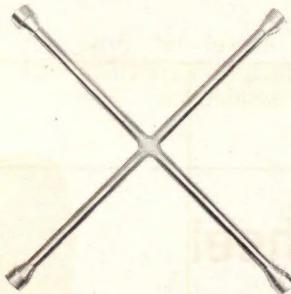


**10719**

Deluxe passenger car lug wrenches, socket sizes,  $\frac{3}{4}$ ",  $\frac{13}{16}$ ",  $\frac{7}{8}$ " and  $\frac{15}{16}$ ". Length 20", stock  $9/16$ ". ( $\frac{3}{4}$ " socket will also fit 19mm wheel nut on foreign cars.)

**10720**

Economy passenger car lug wrench, socket sizes  $\frac{3}{4}$ ",  $\frac{13}{16}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ ". Length 16", stock  $9/16$ ".



**10721**

Light truck lug wrench, forged. Socket sizes  $15/16$ ",  $\frac{7}{8}$ ",  $1\frac{1}{16}$ " and 1". Length 25", stock  $\frac{3}{4}$ ".

**10724**

Leverage bar will fit 10722, 10723, 10725. Length 22", stock  $\frac{3}{4}$ ".

## TIRE TOOLS



**10713**

Straight spoon tire iron, length 24", stock  $\frac{5}{8}$ ".

**10714**

Straight spoon tire iron, length 30", stock  $\frac{5}{8}$ ".



**10716**

Straight spoon tire iron, length 18", stock  $\frac{5}{8}$ ".



**10715**

Curved spoon tire iron, length 24", stock  $\frac{5}{8}$ ".



**10717**

Straight spoon tire iron, length 18", stock  $\frac{5}{8}$ ".

## HAMMERS



**10730**

Truck and passenger tire hammer for loosening beads, length 14".



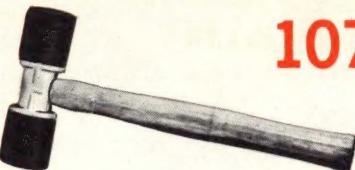
**10731**

2-way combination forged steel and rubber hammer for all-around use. Length 14".



**10732**

2-way combination forged steel and rubber tire hammer with tapered nose. (Loosen bead with tapered end, remount with rubber end.) Length 14".



**10733**

Double headed rubber mallet. Solid molded rubber on forged steel head provides more striking power, and does not come off handle. 2 replaceable rubber heads and hickory handle.



**10734**

8 lb. sledge with 31" hickory handle.



**10731-2**

Replacement rubber head for hammers 10731, 10732, 10733.



**10730-4**

Replacement handle and wedge for hammers 10730, 10732, 10733.

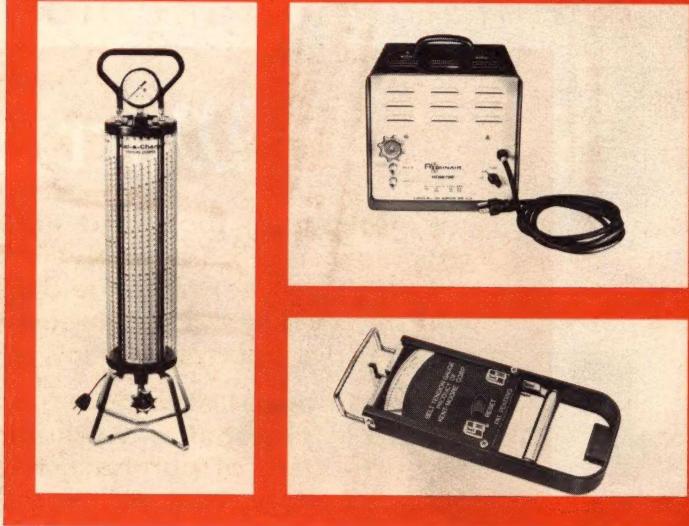
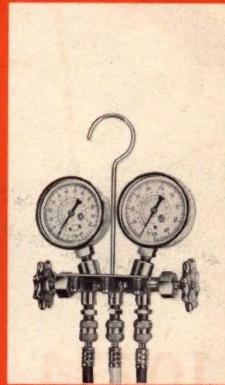
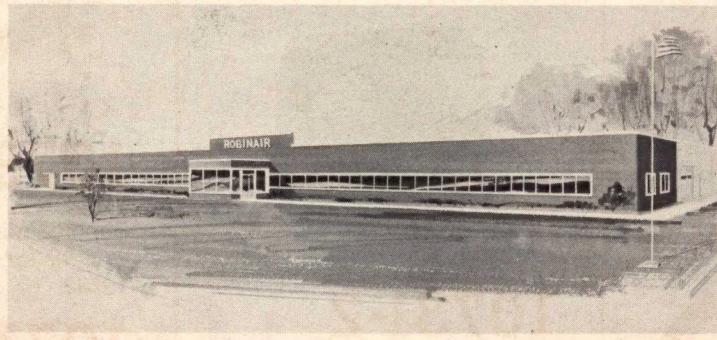
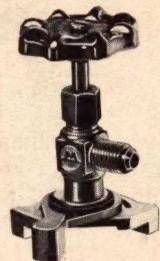
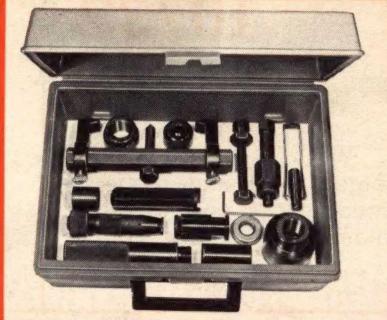
**10731-4**

Replacement handle and wedge for hammer 10731.

## Warranty

All mechanical tools and equipment listed herein, which prove to be defective in material or workmanship within 1 year from the date of purchase for use, will be repaired or replaced by Robinair, free of charge, transportation allowed.

All instruments listed herein, which prove to be defective in material or workmanship within 90 days from the date of purchase for use, will be repaired or replaced by Robinair, free of charge, transportation allowed.



**ROBINAIR®**  
AUTOMOTIVE DIVISION

**ROBINAIR MANUFACTURING CORPORATION** Montpelier, Ohio 43543  
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